

WHAT IS CLAIMED IS:

1. An electric power steering apparatus for a vehicle comprising:

a pinion provided on a shaft co-rotatable with a
5 steering member;

a steering shaft including a rack meshed with the pinion, the steering shaft being movable in an axial direction thereof;

a steering shaft guiding device comprising a guide
10 which guides the steering shaft for movement in the axial direction, and a biasing member which biases the steering shaft toward the pinion by biasing the guide; and

a motion converting mechanism comprising a rotary cylinder surrounding the steering shaft and driven by a
15 steering assist electric motor, the motion converting mechanism being capable of converting rotation of the rotary cylinder into the axial movement of the steering shaft;

wherein the steering shaft is supported by the
20 rotary cylinder, the pinion and the guide; and

wherein the pinion is located between the rotary cylinder and the guide axially of the steering shaft.

2. An electric power steering apparatus as set forth in claim 1, wherein a distance between a middle position
25 of the rotary cylinder and a middle position of the guide

as measured in the axial direction of the steering shaft is greater than a distance between the middle position of the rotary cylinder and a middle position of the pinion as measured in the axial direction of the steering shaft.

5 3. An electric power steering apparatus as set forth in claim 1, wherein a distance between a middle position of the rotary cylinder and a middle position of the pinion as measured in the axial direction of the steering shaft is 20 to 45 times a distance between the middle position
10 of the pinion and a middle position of the guide as measured in the axial direction of the steering shaft.

4. An electric power steering apparatus as set forth in claim 1, further comprising a housing accommodating at least part of the steering shaft, the housing having:
15 a first support portion which rotatably supports the rotary cylinder via a bearing;

a second support portion which rotatably supports the shaft provided with the pinion via a bearing; and

a third support portion which supports the guide
20 movably in a direction perpendicular to the axial direction of the steering shaft.

5. An electric power steering apparatus as set forth in claim 1, wherein the motion converting mechanism comprises a ball screw mechanism comprising a ball nut
25 as the rotary cylinder, a screw shaft provided as a part

of the steering shaft and balls engaged with the ball nut and the screw shaft.

6. An electric power steering apparatus as set forth in claim 1, wherein one of the pinion and the guide of
5 the steering shaft guiding device is located forwardly of the steering shaft with respect to the vehicle, and the other is located rearwardly of the steering shaft.